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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,063	02/26/2004	Takahito Chibana	00862.023486	3287

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EXAMINER

MATHEWS, ALAN A

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No. 10/786,063	Applicant(s) CHIBANA ET AL.	
	Examiner Alan A. Mathews	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2-26-04 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/26/04 & 4/28/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 20 combines three different statutory categories. First, claim 20 recites a device (a product-by-process), secondly it recites the process of “using” the exposure apparatus, and thirdly, it recites the exposure apparatus. This creates confusion as to what is actually being claimed. Furthermore, claiming the process by reciting “using” the apparatus without setting forth any steps involved in the process is indefinite (see MPEP 2173.05 (q)).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-11, 16-18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hasegawa et al. (U. S. Patent Application Publication No. 2002019166 A1). Figure 1 and page 4, paragraph § 72, disclose an exposure apparatus 101 and a wafer stage 102 which holds wafer 103. Paragraphs # 74 and # 75 disclose element 115, which is the cover. Element 112 is the first

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supply port and element 117 is the first recovery port. Paragraph # 77 states “**the amount of inert gas recovered by the exhaust port 117 is set smaller than that of inert gas supplied from the air supply port 112**”. This is the same thing as “a flow rate of the purge gas recovered through said first recovery port is smaller than a flow rate of the purge gas supplied through said first supply port” recited in claim 1. The “**amount**” of purge gas recovered through the first recovery port and “**the flow rate**” of the purge gas recovered through the first recovery port are directly related. Paragraph # 78 discloses controller 131. With respect to claim 16, part of the port includes a straight member. Applicant has not stated what the straightening member does. With respect to claim 17, as broadly as claimed, some type of streamline occurs. Again, Applicant has not recited where the streamline is or what it does. With respect to claim 7, figure 3 and figure 6 discloses two supply ports 143 and 144. The gas would be exhausted through another port. Figure 9 also discloses the two supply ports 143 and 144. With respect to claim 20, as noted above, claim 20 is indefinite. Interpreting claim 20 to be a product-by-process claim, the Examiner finds no difference in the product produced by Hasegawa et al. ‘166 and Applicant’s device (product-by-process). With respect to claim 3, figure 1 discloses blow-out means 121 for blowing out gas formed outside the cover 115. Figure 2 discloses slit 116 allowing escaping having the gas flow in a direction opposed to the flow direction of the blow-out means. Furthermore, figure 16 discloses the blow-out gas from 1121 going in the opposite direction to inert gas escaping at the left of 1115. In addition, figure 17 shows escaping gas flowing in all directions, some of which would be opposed to the direction of gas from the blow-out means.

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4. Claims 3, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Hasegawa et al. (U. S. Patent Application Publication No. 2002/0191163 A1). Hasegawa et al. '163 discloses in figure 1 gas from blow-out means 121 flowing in the opposite direction to gas from the supply port 112 (see the arrows just below the numeral "112" which are going to the left). Element 112 is the first supply port and element 117 is the recovery port.

5. Claims 7 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Piwczyk (U. S. Patent No. 4,801,352). Piwczyk discloses in figure 1 an exposure apparatus with irradiation system 20 (see the last line of the Abstract and column 7, line 40, and column 8, line 60) and a wafer stage 5 and 6 for wafer 2. Figure 3 discloses a cover 1 with a first supply port 11 for gas and a second supply port 15 in a lower portion of cover 1 (see column 9). Element 14 is a first recovery port through which the gas supplied through the first and second supply ports is drawn by suction. With respect to claim 9, the second supply port 15 surrounds a periphery of an exposure area. In an alternative interpretation, figure 5 discloses another embodiment where element 1 is the cover, element 14 (connected to 12), and element 15 (connected to 13), are the first and second supply ports and the recovery port is element 11.

6. Claims 12, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Hansell et al. (U. S. Patent Application Publication No. 2001/0038442 A1). Hansell et al. discloses in figure 2 and page 2, paragraphs # 37 - # 48, an exposure apparatus with scavengers and a semiconductor wafer surface 216. Figures 3 and 4 and paragraphs # 52 - # 56 disclose a scavenger 302 which could be used in figure 2. Scavenger 302 is the cover. The first supply

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port includes element 316. Ports (plural) 330 comprise the first and second recovery ports through which purge gas is drawn (see page 4, paragraph # 59). The wafer surface would be on a stage.

7. Claim 12, 14, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Shiraishi et al. (U. S. Patent No. 6,731,371). Shiraishi et al. discloses in figure 5 a cover and a first supply port inside the cover connected to element 81. Shiraishi et al. discloses a first recovery port and a second recovery port through which purge gas is drawn by suction.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa et al.'166 as applied to claims 1 and 3 above, and further in view of Hasegawa et al.'889. Hasegawa et al.'166 discloses the invention claimed except for having a first and second pressure sensor. Hasegawa et al.'889 discloses pressure sensor 117 and 112b and 120b and 123b (see paragraph # 176). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide Hasegawa et al.'166 with a pressure sensor

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inside the cover and a second pressure sensor outside the cover in view of Hasegawa et al.'889 for the purpose of better controlling the pressure inside the cover and thus having less contamination.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hansell et al. (U. S. Patent Application Publication No. 2001/0038442 A1) as applied to claim 12 above, and further in view of Hasegawa (U. S. Patent Application Publication No. 2002/0191166 A1). Hansell et al. discloses the invention except for having a total flow rate of the purge gas recovered through said first and second recovery ports is smaller than a total flow rate of the purge gas supplied through said first supply port. Hasegawa states in paragraph # 77 **“the amount of inert gas recovered by the exhaust port 117 is set smaller than that of inert gas supplied from the air supply port 112”**. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the total flow rate of the purge gas recovered through said first and second recovery ports to smaller than a total flow rate of the purge gas supplied through said first supply port in Hansell et al. in view of Hasegawa for the purpose of preventing contamination inside the cover and thus producing a better final product.

Conclusion

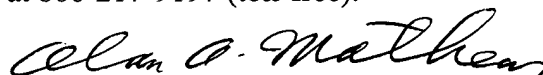
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents cited in the PTO-1449 are cited for the same reasons they were cited in Applicant's IDS. The patents to Davison et al., Schrijver et al. are cited to show other air flows.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan A. Mathews whose telephone number is (571) 272-2123. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alan A. Mathews
Primary Examiner
Art Unit 2851

AM